Lessons Learned From Tailored Gender Equality Plans: Classification and Analysis of Actions Implemented Within the EQUAL-IST Project

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Abstract: Gender Equality Plans (GEPs) represent a comprehensive tool to promote structural change for gender equality in research institutions. The Horizon 2020 EQUAL-IST project (“Gender Equality Plans for Information Sciences and Technology Research Institutions”) supports six informatics and Information Systems Departments at universities across Europe to initiate the design and implementation of GEPs. This paper is focused on project outcomes of the first iteration of GEP implementation (October 2017 - May 2018). Based on the internal reports provided by the involved research institutions, we classified the implemented actions as ‘structural change actions’ or ‘preparatory actions’ (following the study by Sangiuliano, Canali & Madesi, 2018) and as ‘internally-oriented actions’ or ‘externally-oriented actions’. The implemented actions were analyzed across such intervention areas as Institutional Communication, Human Resources and Management Practices, and Teaching and Services for (Potential) Students. The conducted study addresses the need to investigate the peculiarities of GEP implementation in the Information Sciences and Technology (IST) and Information and Communications Technology (ICT) disciplines, where the gender leak in the recruitment pipeline often starts at universities already, with extremely low numbers of enrolled female students. We therefore aim at understanding if the notable amount of actions to attract more female students, which were initiated within the EQUAL-IST project during the first iteration of GEP implementation, implies a risk to bend the process towards more externally-oriented actions, which are less likely to impact internal power structures, at least in the short run. The second purpose of the paper is to explore, whether structural change actions, which have the potential to go beyond mere raising awareness on the topics at stake, tend to be concentrated in the Human Resources and Management Practices area.

Keywords: gender equality plans (GEPs), structural changes, research organizations, implementation, information sciences and technology, sustainability

1. Motivation and background

Over the last decades, policies for European Research and Technological Development have been focusing more and more on how gender aspects impact research and innovation (R&I). Following up the research and policy work in this field set up by the Helsinki Group, European Research Area (ERA) has prioritized the following objectives: gender equality in decision-making, gender equality in research teams, and incorporation of the gender dimension into research content and innovation (European Commission, 2012a; Council of the European Union, 2015). Therefore, European Union (EU) member states are expected and encouraged to set up incentives to achieve these objectives. ERA is also encouraging partnership of EU governments with Research Funding Organizations (RFOs) and Research Performing Organizations (RPOs) to promote cultural change in academia and consequently trigger institutional change.

The ERA concept and the policy tools promoting institutional change reflect the gender mainstreaming perspective and are referred to as structural change (European Commission, 2012b). Structural change practices are aimed at provoking transformations in institutions, in particular, in their rules, regulations, organizational processes, and cultures (European Commission, 2014). Thus, structural change is an effort to progress beyond the idea that women need to be trained or granted special support as the under-represented sex. In the recent policies issued by the European Commission (EC), which were reflected in the FP7 and Horizon 2020 (H2020) framework programs, Gender Equality Plans (GEPs) have been promoted as the main tool to achieve structural change. Based on the insights from sociology of gendered organizations (Gherardi, 1994), GEPs are intended to incorporate gender equality policies into change management practices and lead to institutional transformation (EIGE, 2016).

Since 2007 the EC have funded on average 3-4 FP7 and H2020 projects per year to support European RPOs and RFOs in designing, implementing, and evaluating GEPs. Projects like GenisLab (2014), Integer and Stages (2015),
Egera, Festa, Garcia, and Genovate (2016), GenderTime and Trigger (2017) delivered insightful reports and toolkits on how to foster structural change for gender equality and what are the main constraints and critical aspects at stake. In these projects gender equality is being increasingly seen not only as an issue of under-representation of women, but also as a core dimension of research excellence (European Commission, 2011). This also resonates with the new normative foundations for higher education and research institutions to become more ‘managerial’ and ‘entrepreneurial’ (Kreissl et al., 2015).

Implementation of GEPs in research institutions is monitored in the ERA periodic reports, which show that in spite of an increasing number of RFOs and RPOs adopting the aforementioned policies the majority of EU research organizations are still not committed to structural change for gender equality (European Commission, 2017). Consequently, additional guidelines and tools, such as the GEAR (Gender Equality in Academia and Research) Toolkit developed by the European Institute for Gender Equality (EIGE), have been provided by the EC to assist research organizations in understanding, which steps and specific implementation processes could be exploited (EIGE, 2017). The H2020 EQUAL-IST project (“Gender Equality Plans for Information Sciences and Technology Research Institutions”), which was approved in 2016 within the H2020 program “Science with and for Societies”, applied these guidelines and tools to the research institutions in Information Sciences and Technology (IST) and Information and Communications Technology (ICT) disciplines.

IST and ICT belong to the STEM fields (Science, Technology, Engineering, and Mathematics), where statistics shows under-representation of women along the entire career pipeline, from studying to accessing research positions to progressing in the career ladder to top leadership positions. Figures on ICT tertiary studies in 2015 show that there are four times as many male graduates as female graduates (European Commission, 2018a). As for the leadership positions in EU research organizations, the SheFigures 2015 report (European Commission, 2016) showed that despite some positive trends over the last years women constituted on average 20.9% of Grade A (full professors) across all disciplines and only 9.8% in the Engineering and Technology field, which includes IST and ICT.

The EQUAL-IST project focuses on supporting six Informatics and Information Systems Departments from Germany, Finland, Italy, Lithuania, Portugal, and Ukraine to become engaged into achieving internal structural change for gender equality through GEP implementation. Running for 36 months, the project took the challenge to develop and implement the lacking discipline-specific interventions related to gender equality in the ICT and IST fields (Benschop & Van den Brink, 2011). The project addresses the following four main areas of intervention: Institutional Communication, Human Resources (HR) and Management Practices, Teaching and Services for (Potential) Students, and Research Design and Delivery.

The project started with an internal gender audit performed at each participating RPO, where a mixed methodology was applied using quantitative data analysis and qualitative techniques (e.g., focus groups, semi-structured interviews, and workshops). This process had led to the identification of the challenges related to gender equality at each RPO. These challenges, as well as ideas to address them, were then discussed on a crowdsourcing online platform, which was developed within the project (http://www.crowdequality.eu) in order to trigger a participatory approach to design the tailored GEPs. The designed GEPs have been implemented at RPO in two rounds: the first iteration from October 2017 to May 2018 and the second iteration from July 2018 to April 2019.

In this paper the results of the first iteration of GEP implementation are analyzed and discussed. The analysis is based on the GEP implementation reports delivered by the participating RPOs. As we clarify below, a self-assessment process was performed during the GEP implementation as part of a continued monitoring activity, which was conducted in a dialogue with the external evaluation team and supported by mutual learning during face-to-face meetings and online sessions of the project consortium.

In line with the study by Sangiuliano et al. (2018), we propose to analyze the self-reported implemented actions as either ‘structural change actions’ or ‘preparatory actions’. Furthermore, based on the main audience involved in the implemented actions, we proposed to further classify them as being either ‘internally-oriented’ or ‘externally-oriented’.

Identification of the share of structural change actions among all implemented actions is especially important, as there is a risk that the project could end up with non-sustainable actions having limited impact. This risk was
highlighted in the majority of the 19 in-depth interviews with representatives of research organizations across Europe, which were involved in similar third-party funded projects aimed at GEP design and implementation. These interviews were conducted at the beginning of the EQUAL-IST project as part of the state-of-the-art analysis. Furthermore, the ERA progress report (European Commission, 2017) and the FP7 GenderNet project reports (GenderNet, 2015) stressed the need in continuous institutional commitment and monitoring mechanisms for GEP implementation. GEP sustainability is also highlighted by the EC as a core element to work on (European Commission, 2018b).

The first purpose of the paper is to explore, whether the notable amount of actions to attract more female students, which were initiated within the EQUAL-IST project during the first iteration of GEP implementation, implies a risk to bend the process towards more externally-oriented actions, which are less likely to impact internal power structures, at least in the short run. The second purpose of the paper is to explore, whether structural change actions, which have the potential to go beyond mere raising awareness on the topics at stake, tend to be concentrated in the HR and Management Practices area.

2. Methodology for reporting on the GEP implementation

The objective of internal reporting within the EQUAL-IST project was to monitor and assess the GEP implementation progress by (i) the RPOs internally, (ii) the project task and work package leaders, and (iii) the external evaluation team. Each RPO had to report continuously on the initiated actions and their evaluation. At the end of the first iteration of GEP implementation the final versions of internal reports provided by the RPOs were included into a project deliverable (Gorbacheva, 2018). This deliverable also contained an overview of the GEP implementation progress at each RPO and analysis of content and time deviations from the GEPs.

During the first iteration of GEP implementation, 63 distinct actions were reported by the RPOs. These actions were aimed at addressing the challenges related to gender equality identified at each RPO during internal gender audits. Each action could be classified into one of the following project intervention areas: Institutional Communication, HR and Management Practices, and Teaching and Services for (Potential) Students.

When performing the reporting, the RPOs had to follow specific guidelines, which were developed by the task and work package leaders, informed by the recommendations from the project external evaluation team, as well as disseminated, discussed, and approved by all RPOs. The guidelines for internal reporting prescribed provision of the following information for each implemented action:

- General description of the work performed, focusing on the action objectives, main ideas, and content.
- Action impact focusing on the changes in processes and procedures and the changes related to behavior and culture.
- Details of the course and outcomes of the action evaluation.
- Action duration and status (completed, in progress, in preparation).
- Stakeholders involved in the action management and implementation, as well as those providing informational and advisory support.
- In case the reported action was an event or a standalone study: number of participants and the numbers of men and women among them.
- Faced problems or obstacles during the action planning or implementation and undertaken solutions to address them.
- Factors that have made the action successful or unsuccessful.
- Unexpected positive or negative results observed during the action planning or implementation.
- Links to all available materials related to action preparation and implementation, which had to be stored separately.
- Elaboration on how the sustainability of the action beyond the project runtime was planned to be ensured (in terms of resources, knowledge, institutionalization etc.).
3. Methodology for the analysis of results

This work follows up the paper by Sangiuliano et al. (2018) and is focused on the analysis of results of the first iteration of GEP implementation (October 2017 - May 2018). Here the classification used by Sangiuliano et al. (2018), where ‘structural change actions’ were distinguished from ‘preparatory actions’, was refined into a more complex matrix intersecting the initial categorization with the scope of the actions as being ‘internally-oriented’ or ‘externally-oriented’ (Figure 1).

![Implementation of GEPs]

**Internally-oriented actions**
Actions primarily targeted at staff members and/or students at the implementing RPO

**Externally-oriented actions**
Actions primarily targeted at local, national, and international beneficiaries/stakeholders who are not members of the implementing RPO

**Preparatory actions**
Actions focused on creating preconditions and aimed at raising awareness and building capacity

**Structural change actions**
Actions focused on introducing structural changes and aimed at changing institutional procedures, structures, and regulations

**Figure 1:** Proposed classification of implemented actions

As clarified in Figure 1, the following four labels were used to classify the implemented actions:

- “IP” - Internally-oriented preparatory actions: actions targeting staff members or current students at the implementing RPOs and focused on raising awareness on gender equality issues; the ultimate goal of such actions is to promote a change in the institutional culture.
- “EP” - Externally-oriented preparatory actions: actions targeting external stakeholders aimed at supporting the overall process of change.
- “IS” - Internally-oriented actions focused on introducing structural changes: actions targeting internal stakeholders and staff members focused on moving beyond the objective of creating preconditions and resulting in changes in structures, procedures, regulations etc.
- “ES” - Externally-oriented actions focused on introducing structural changes: actions targeting external stakeholders and resulting in (internal) structural changes.

This categorization provides a first step to analyze the nature of actions towards institutional change and it does not consider all possible complexities of change. In this matrix, internally-oriented actions for structural change (“IS”) can be seen as the ‘main’ actions, while externally-oriented actions to build preconditions (“EP”) can be framed as the ‘first steps’ in the structural change; the other two categories, namely “IP” and “ES”, stand in between. In spite of its simplicity, the framework can still be useful to enhance understanding of prevailing patterns in structural change processes.

As mentioned in the previous section, the individual reports provided by the six RPOs implementing tailored GEPs within the EQUAL-IST project were screened and 63 distinct implemented actions could be identified. Each action has been attributed to one of the aforementioned four categories. A cross-check of interpretative choices and doubts was shared and resolved by the authors. In cases where a specific action could be assigned to more than one category (e.g., targeting both internal and external stakeholders), the most fitting category was chosen.
Data analysis reported in the following section presents our findings both in an aggregated way (without specifying individual RPOs) and for each project intervention area. It needs to be noted here that inconsistencies in allocating actions to intervention areas could be revealed in the reports submitted by the RPOs. Therefore, during the analysis re-allocation of such actions to correct intervention areas was performed.

4. Results

Most of the 63 analyzed actions belonged to the HR and Management Practices project intervention area, followed by the actions in the Teaching and Services for (Potential) Students and Institutional Communication areas at almost the same rates (Figure 2). At the same time, the Research Design and Delivery area remained unattended during the first iteration of GEP implementation.

HR and Management Practices is a broad area and includes such crucial aspects as recruitment, retention, career progress, access to top academic positions, as well as work-life balance. Furthermore, within the EQUAL-IST project such management aspects as governance structures and equality bodies were also included into this intervention area. Therefore, this is definitely the core area for promoting institutional change and it is not surprising that 31 out of 63 implemented actions belonged to it. As for the Teaching and Services for (Potential) Students area, a higher share of actions was expected here, as during the project mutual learning activities and monitoring sessions the RPOs often stressed the need for actions to attract more girls to apply to the respective study programs. This observation shows that project working groups at the RPOs (who are in charge of steering the GEP implementation) managed to achieve a balanced representation of actions in the project main intervention areas. Nevertheless, no actions were foreseen in the GEPs in the Research Design and Delivery area. This reflects internal difficulties reported by the RPOs in grasping how the gender dimension could be relevant in ICT and IST research, which is considered to be gender-neutral.

![GEPs' first iteration _Overall results per Area of Intervention](image)

**Figure 2:** Implemented actions per area of intervention

Regarding the nature of implemented actions, Figure 3 shows that that twice as many preparatory actions as structural change actions were implemented (45 vs. 18 actions). This finding is not surprising, as all RPOs are still at the initial stage of setting up gender policies and this was the first iteration of GEP implementation. Therefore, implementation of 18 structural change actions already before the end of the project can be considered as a positive outcome. The majority of the actions were internally-oriented (53 out of 63). Out of 10 externally-oriented actions, 9 were preparatory actions. The only externally-oriented action focused on introducing structural changes was assigned to the HR and Management Practices area of intervention. In this action, a collaboration protocol was signed with external national-level stakeholders. The protocol was focused on joint actions to promote gender equality in research institutions across the country. This strategic action had a positive and triggering impact on the overall GEP implementation, as the protocol increased its legitimacy, as well as increased recognition of the EQUAL-IST project, in particular, in the eyes of the RPO middle-level management.
Figure 3: Overview of preparatory and structural change actions

A closer look at each intervention area revealed that external stakeholders were not involved in the Institutional Communication area (Figure 4). In this area, internally-oriented preparatory actions were focused on raising awareness of gender bias in visual and verbal communications, as well as assessment of communication materials using the gender-sensitive approach. The internally-oriented actions focused on introducing structural changes here included updating communication materials based on the recommendations from the performed assessment, setting up of new dedicated communication channels, and formal adoption of guidelines on gender-sensitive communication.

Figure 4: Preparatory and structural change actions in the institutional communication area

The most populated HR and Management Practices intervention area (Figure 5) contained the majority of internally-oriented actions focused on introducing structural changes. The most relevant actions here included as follows: formal agreements on telework, changed procedures for data collection and analysis (considering gender-disaggregated data), gender-sensitive career planning tools adopted at the department level, setting up of gender equality bodies, formation of networks for female researchers, appointment of contact people for gender-related matters at departments, and incorporation of gender equality as one of the values into the faculty mission statement. Internally-oriented preparatory actions, in turn, included the interventions focused on raising awareness, building capacity, provision of information about existing work-life balance regulations and the roles of existing gender equality machineries, a study to investigate the opportunity to establish on-campus child-care facilities, and analysis of the needs of staff members with childcare duties. One striking finding was that even though the ICT and IST disciplines are among those with the lowest shares of women among full professors and in leadership positions, no actions to address this challenge were included in the GEPs. The prevailing discourse of unbiased and meritocratic recruitment proved hard to be challenged, at least during this
initial phase of implementing gender equality policies. Activities to raise awareness of gender bias in recruitment were initiated only at one RPO. Here each time a new appointment committee for tenured positions was formed, the faculty Equal Opportunities Officer sent to the members of these appointment committees an email informing about unconscious bias and about existing regulations related to gender equality in recruitment. The goal was to sensitize the members of appointment committees about the importance of ensuring equal treatment of all candidates and avoiding any form of bias and discrimination.

![Typology of GEPs Results: HR & Management Practices](image)

**Figure 5:** Preparatory and structural change actions in the HR and management practices area

Finally, the Teaching and Services for (Potential) Students area targeted external stakeholders the most (Figure 6).

![Typology of GEPs’ results: Teaching and services for (potential) students](image)

**Figure 6:** Preparatory and structural change actions in the Teaching and Services for (Potential) Students area

The externally-oriented preparatory actions here targeted girls from primary to high schools and were aimed at teaching them basic coding skills and encouraging them to pursue studies in the ICT and IST disciplines. These actions involved such external partners or sponsors as schools, ICT companies and foundations, and local Non-Governmental Organizations. Most of these actions required significant administrative efforts (e.g., organization of summer camps located at different campuses). Internally-oriented actions focused on introducing structural changes in this intervention area were related to reviews of teaching materials to eradicate gender bias, launching of awards for teams of ICT students that involve women, and institutionalization of annual events on
training high school girls to code as permanent activities. It is interesting to note that while initiatives to attract girls to study ICT and IST undertook a clear disciplinary focus, actions on gender-sensitive teaching were not addressing the specificity of teaching in the ICT and IST disciplines. We expect these aspects to be more widely covered during the second iteration of GEP implementation, as good practices and inspirational examples were proposed to the RPOs in the toolkit developed within the EQUAL-IST project (available at https://equalist.dais.unive.it/public).

5. Concluding remarks and recommendations

This paper is aimed at studying the main characteristics of GEP implementation at ICT and IST research institutions. The analysis is based on the results of the first iteration of GEP implementation within the EQUAL-IST project. Earlier feedback from most participating RPOs showed that attracting more girls to ICT studies formed the focus of GEP actions, as such actions could be understood and approved by internal decision-makers. On the other hand, the RPOs reported that during internal gender audits no need was identified to integrate the gender dimension into ICT and IST research content. This entailed the risk of having the actions mostly focused on the Teaching and Services for (Potential) Students intervention area and targeting external stakeholders, thus losing an inward-oriented approach towards changing structures, internal regulations, and processes. Using the information provided by the RPOs in their reports on the first iteration of GEP implementation, we have elaborated a four-dimensional matrix to classify all the reported actions along the ‘preparatory’ vs. ‘structural change’ and the ‘internal’ vs. ‘external’ dimensions. The results disconfirmed the foreseen risk that a preparatory orientation hinders structural change dynamics, as 18 out of 63 aggregated actions were still focused on introducing structural change. Furthermore, although the Teaching and Services for (Potential) Students area generated 17 actions, the majority of actions (31 out of 63) was implemented within the HR and Management Practices area. Here it needs to be mentioned that the importance of balance across the different intervention areas was communicated to the RPOs during training and mutual learning events as a fundamental element of GEP design and implementation.

The emerging unexpected critical aspect was the identification of ICT and IST research as gender neutral, which resulted in having no actions included in the Research Design and Delivery intervention area. The aspect of including a gender dimension into ICT research appeared to be a kind of ‘taboo’ at all involved RPOs, perceived as something difficult to grasp and being a low priority. Several factors could influence this phenomenon: for instance, the resistance to consider (cyber-)feminist and gender theories in the ICT and IST research, as well as the limited knowledge of recent developments in such research areas as algorithmic gender bias (Bolukbasi et al., 2016; Boulamwini & Tebru, 2018). These aspects were highlighted in a dedicated section of the toolkit developed within the EQUAL-IST project and corrective measures to support actions in the Research Design and Delivery area are on the agenda for the second iteration of GEP implementation.

As for the ‘transformativity’ of the achieved structural changes, it is important to underline the following two caveats:

- In the HR and Management Practices intervention area the implemented actions did not address the issue of under-representation of women in leadership and top academic career positions. Existence of gender bias in recruitment and in the definition of excellence standards was generally denied.

- The sustainability of most internally-oriented actions focused on introducing structural changes (e.g., the actions related to internal governance changes and those addressing financial and HR-related constraints) could not be guaranteed. Therefore, during the second iteration of GEP implementation partners intend to work on setting up dedicated sustainability plans to ensure the support of all initiated structural change actions.

Despite the revealed shortcomings, for such an early stage of GEP implementation we consider that satisfactory results in terms of triggering structural changes could be achieved within the EQUAL-IST project. The following recommendations to research institutions that intend to implement GEPS as a tool for achieving structural change emerged from the study outcomes, which are in line with available studies and literature:

- Organize trainings on integrating the gender dimension into research content, as, especially in the ICT and IST disciplines, there is a lack of awareness about its importance and a lack of understanding of how it could be performed (European Commission, 2017; Gender Net Project (2015)).
Ensure that the actions addressing the (gender) bias in recruitment procedures and lack of women at top academic positions are included in the GEPS and thoroughly implemented (European Commission, 2012a and 2012b).

Introduce indicators related to GEP sustainability and perform periodic monitoring of GEP implementation; here the impact of implemented actions needs to be evaluated, including regular collection and analysis of gender-disaggregated statistics (EIGE, 2016).

Value collaboration with the following external stakeholders: (i) girls as perspective enrolled students and (ii) national high-level stakeholders as the agents driving GEP legitimacy and acceptance.

Support of external stakeholders could prevent the marginalization of gender equality issues and emergence of anti-feminist attitudes towards gender equality policies. Thus, gaining external support and building allies is especially important in such a controversial time as the present one, when advances coexist with backlashes (Köttig, Bitzan & Peto, 2017).

References


